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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/583,375	05/30/2000	Hideho Une	450100-02519	1327

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FROMMER LAWRENCE & HAUG
745 FIFTH AVENUE- 10TH FL.
NEW YORK, NY 10151

EXAMINER

SOLOMON, GARY L

ART UNIT	PAPER NUMBER
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2615

6

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/583,375

Applicant(s)

UNE ET AL.

Examiner

Gary L Solomon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5-30-2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 & 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taura (US 6,642,957) in view of Yamada (US 6,573,935) in further view of Van Rooy (US 6,657,659),

For claim 1, Taura teaches a white balance color correction system for a color imaging apparatus comprising:

a solid-state image sensor having photo sensors color-coded with three primary color filters formed like a matrix correspondingly to pixels of the solid-state image sensor, to provide three primary color signals acquired as captured image signals (Abstract; Figure 3);

a three-channel signal detecting means for detecting, from the three primary color signals provided from the solid-state image sensor (Figure 3), an R signal acquired from R pixels, a G signal acquired from the G pixel, and a B signal acquired from the B pixels (Figure 3)

a three-channel variable-gain amplifying means whose channels are controllable in gain independently of one another to amplify the R, G, and B signals; and

a gain controlling means for controlling, based on an output from the signal detecting means, the gain of each channel of the variable-gain amplifying means so that the R, G, and B

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signals amplified by the variable-gain amplifying means are equal in level to one another for an achromatic color image (Column 1, Lines 30-33).

However, Taura does not teach a four channel detecting means acquiring an R signal from a horizontal line of R, G, R, G, ... color filters, a Gr signal from G pixels the same horizontal line, a Gb signal acquired from G pixels in a horizontal line of G, B, G, B color filters... and a B signal acquired from B pixels in the same horizontal line as claimed. In contrast, Taura teaches the acquisition of R, B, and G signals from their respective filters (Figure 3).

Nevertheless, Yamada teaches the horizontal lines of R, G, R, G, and G, B, G, B in the notoriously well-known Bayer filter pattern (Figure 1), which would have acquired the signals from these horizontal lines similar to those as claimed in the preceding paragraph. Yamada also teaches the use of separately controlled Gr and Gb signals in order to reduce problems of crosstalk.

Therefore, taking the combined teaching of Taura and Yamada as whole, it would have been obvious to apply Bayer Filter Pattern as suggested by Yamada to solve the problem of the lateral striped noise or crosstalk.

Yamada does teach changing exposure to correct the green colors and does not teach changing gain to correct the green colors as claimed. Yamada and Taura lack motivation to combine the apparatuses. Yamada teaches only changing correction by controlling exposure.

However, correction can be made by controlling either gain or exposure (Van Rooy; Column 3, Lines 20-25).

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Therefore, taking the combined teaching of Taura, Yamada, and Van Rooy as a whole, would have been obvious to one of ordinary skill in the art at the time of the invention to use obvious variation of Yamada as taught by Van Rooy in the apparatus of Taura to effectively eliminate lateral striped noise.

For claim 2, Taura, Yamada, and Van Rooy teach all the previous limitations and Yamada also that the gains of the channels for the Gr and Gb signals can be controlled by pre-calculated fixed compensation factors (Yamada: Column 9, Lines 30-54). The compensation factors are fixed for at least the time the correction is made (Column 9, Lines 35-40).

For claim 3, Taura, Yamada, and Van Rooy teach all the previous limitations. In the rejection of claim 1, it is noted that Yamada teaches the separation of the green signal in to separate Gb and Gr signals in order to use to the notoriously well-known Bayer filtering arrangement. The amplitude difference accounts for the lateral striped noise in the Yamada reference. Yamada then teaches the correction of this through the use of changing the integration time, which is analogous to changing variable gain as taught by Van Rooy (Column 3, Lines 20-25).

For claim 4, Taura, Yamada, and Van Rooy teach all the previous limitations and also that the image sensor is a CCD (Taura; Figure 3).

Claims 6-9 are method claims for claims 1-4. They are rejected under the same grounds of rejection.

3. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taura (US 6,642,957) in view of Yamada (US 6,573,935) in further view of Van Rooy (US. 6,657,659) in further view of Kim (US. 6,597,395).

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For claim 5, Taura, Yamada, and Van Rooy teach all the previous limitations, but lack teaching sampling and holding and automatic gain control before A/D Conversion.

Nevertheless, Kim teaches sampling and holding, automatic gain control, and then A/D conversion in that order (Figure 1). It would have been obvious at the time of the invention to combine the known sequence of operation of Kim with the system of Yamada, Tamayama, and Van Rooy in order to accurately calibrate for black level adjustment (Abstract; Kim).

Claim 10 is a method claim for claim 5. It is rejected under the same grounds of rejection.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L Solomon whose telephone number is (703)-305-4370.

5. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's primary, Vu Le can be reached on (703)-308-6613.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 872-9314, (for informal or draft communications, please label
"Proposed" or "Draft")

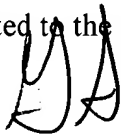
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application should be directed to the customer service number (703) 306-0377.

A handwritten signature, possibly reading "DA", in black ink.

February 9, 2004

A handwritten signature in black ink, appearing to be "VULE".

VULE
PRIMARY EXAMINER